

**REMARKS**

In the Office Action, claims 1-38 were rejected. Claims 1-38 remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

**Rejections Under 35 U.S.C. § 112**

Claims 15, 16, 29, and 30 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Applicants respectfully traverse this rejection. The Examiner stated that the claims 15, 16, 29 and 30 provide for an intended use of apparatus, but since the claims fail to set forth any structure involved in the apparatus or any step involved in the method of its use, it is unclear what apparatus and/or method applicant is intending to encompass.

Applicants respectfully submit that the one or more X-ray bulbs as set forth in claims 15, 16, 29, and 30 are configured to emit X-rays at different locations relative to an imaging volume defined by an imaging modality such as a CT system or a tomosynthesis system. In particular, the recited imaging volumes are not “acted upon” by the respective systems but are instead those aspects or regions of the systems within which an object or patient to be imaged is positioned. Claims 15, 16, 29, and 30 include and distinctly claim this very aspect of Applicants’ invention. Accordingly, Applicants requests that the Examiner reconsider and remove the §112 rejection of claims 15, 16, 29, and 30.

**Rejections Under 35 U.S.C. § 102**

In the Office Action, claims 35 and 37 were rejected under 35 U.S.C. § 102(e) as being anticipated by Kieffer et al., U.S. Patent Application No. 2004/0037392 (hereinafter “Kieffer”). Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. Applicants respectfully traverse this

rejection and assert that the present invention, as recited in independent claim 35 is patentable over the Kieffer reference.

The Kieffer reference discloses a method of generating x-rays, comprising rotating a target 16 within an X-ray generation chamber 18, and focusing a laser beam 14 onto a focal point through which said target rotates. In addition, the Kieffer reference discloses moving the target between laser shots so as to expose a fresh surface of the target to each new laser shot. However, Applicants respectfully submit that *Kieffer fails to teach, disclose, or suggest an X-ray bulb of the type described in the present application. See Application, Figs. 4 and 5, and paragraphs 36-45.*

In particular, the Applicants respectfully refer the Examiner to the recent and legally controlling *en banc* decision *Phillips v. AWH Corp.* in which the Federal Circuit determined “the extent to which we should resort to and rely on a patent’s specification in seeking to ascertain the proper scope of its claims.” *Phillips v. AWH Corp.*, 75 U.S.P.Q.2d 1321, 1325 (Fed. Cir. 2005) (*en banc*). The Federal Circuit noted that the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art at the time of the invention. *Id.* at 1326. A person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but also in the context of the entire patent, including the specification. *Id.*

In particular, the Federal Circuit noted that the claims must be read in view of the specification of which they are a part. *Id.* at 1327. The Federal Circuit noted that the specification is always highly relevant to claim construction, usually dispositive, and the single best guide to the meaning of a disputed term. *Id.* The Federal Circuit recognized that the Federal Circuit, its predecessors, and, indeed, even the Supreme Court, have “long emphasized the importance of the specification in claim construction.” *Id.* In

possibly the best summary of the importance of the specification, the Federal Circuit relied upon the *Renishaw* decision, which states:

Ultimately, the interpretation to be given a term can only be determined and confirmed with full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

*Id.* at 1328-29.

With this controlling precedent in mind, the Applicants respectfully submit that one of ordinary skill in the art would not read the relevant portions of the present specification, i.e., paragraphs 36-45 and the accompanying figures, and erroneously conclude that the disclosed target chamber 18 was a bulb. Indeed, the Applicants respectfully submit that one of ordinary skill in the art under the guidance of the present application would find the Kieffer reference to be devoid of any teaching of an X-ray bulb.

At least because Kieffer do not teach, disclose or suggest an X-ray bulb as claimed, the reference cannot support a *prima facie* case of anticipation of claim 35. Claim 37 depends directly from claim 35. Accordingly, the Applicants submit that claim 37 is allowable by virtue of their dependency from an allowable base claim. Applicants also submit that the dependent claim is further allowable by virtue of the subject matter they separately recite. Thus, it is respectfully requested that the rejections of claims 35 and 37 under 35 U.S.C. §102(e) be withdrawn.

**Rejections Under 35 U.S.C. § 103**

Claims 1, 3-5, 7, 10, 11, 19, 22, and 36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kieffer in view of Tsuno et al., U.S. Patent Application No. 2004/0246610 (hereinafter "Tsuno") and further in view of Tillman et al. titled "Survival of Mammalian Cells Exposed to Ultrahigh Dose Rates from a Laser-produced Plasma X-ray Source" (hereinafter "Tillman"). Claims 12-18, 23-34, and 38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kieffer, Tsuno, and Tillman and further in view of Zhao et al., U.S. Patent No. 6,937,689 (hereinafter "Zhao"). Claims 2 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kieffer, Tsuno, and Tillman and further in view of Ono et al., U.S. Patent No. 5,696,804 (hereinafter "Ono"). Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kieffer, Tsuno, and Tillman and further in view of Hirano et al., U.S. Patent No. 5,949,849 (hereinafter "Hirano"), and claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kieffer, Tsuno, Tillman in view of Nelson U.S. Patent No. 5,982,847 (hereinafter "Nelson") and further in view of Benson et al., U.S. Patent No. 5,696,865 (hereinafter "Beeson"). Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kieffer, Tsuno, and Tillman and further in view of Kondo et al., U.S. Patent No. 6,324,255 (hereinafter "Kondo"), claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kieffer, Tsuno, and Tillman and further in view of Hunter et al. titled "Design and Characterization of a Laser-based Instrument to treat Hemangiomas Using Spectroscopic Feedback: The Smart Scalpel" (hereinafter "Hunter"), and claim 38 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kieffer in view of Zhao. The Applicants respectfully traverse the present rejections under 35 U.S.C. § 103(a) and request reconsideration by the Examiner of the present claims so rejected.

**Claims 1 and 11 and the Claims Depending Therefrom and Claim 36.**

Applicants respectfully assert that the present invention, as recited in independent claims 1 and 11 is patentable over Kieffer, Tsuno and Tillman, alone or in combination.

The examiner acknowledges that Kieffer fails to teach, disclose or suggest the generation chamber to have at least a partially rounded surface so as to comprise a bulb envelope. Additionally, the examiner acknowledges that Kieffer fails to teach, disclose or suggest the bulb envelope to have a coating on its curved surface so as to form a focusing surface for the laser. The Examiner cites Tsuno and Tillman to obviate these deficiencies in the teaching of Kieffer respectively.

a. The cited references do not teach all of the elements of claims 1 and 11

As noted above, the Kieffer reference does not disclose a bulb as would be understood by one of ordinary skill in the art having the benefit of the present specification. Therefore, the Kieffer reference also does not disclose a bulb envelope or bulb coating as recited in the present claims. Furthermore, neither the Tsuno nor the Tillman reference addresses these deficiencies of the Kieffer reference. Therefore, the combination of references relied upon by the Examiner does not disclose all of the recited elements of claims 1 and 11 or of those claims depending therefrom.

b. The Tsuno reference is non-analogous art.

For the teachings of a reference to be prior art under 35 U.S.C. § 103, there must be some basis for concluding that the reference would have been considered by one skilled in the particular art working on the particular problem with which the invention pertains. *In re Horne*, 203 U.S.P.Q. 969, 971 (C.C.P.A. 1979). Non-analogous art cannot properly be pertinent prior art under 35 U.S.C. § 103. *In re Pagliaro*, 210 U.S.P.Q. 888, 892 (C.C.P.A. 1981). The determination of whether a reference is from a non-analogous art is set forth in a two-step test given in *Union Carbide Corp. v. American Can Co.*, 724 F.2d 1567, 220 U.S.P.Q. 584 (Fed. Cir. 1984). In *Union Carbide*, the court found that the first determination was whether “the reference is within the field of the inventor’s endeavor.” If it is not, one must proceed to the second step “to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved.” In regard to the second step, *Bott v. Fourstar Corp.*,

218 U.S.P.Q. 358 (E.D. Mich. 1983) determined that “analogous art is that field of art which a person of ordinary skill in the art would have been apt to refer in attempting to solve the problem solved by a proposed invention.” “To be relevant the area of art should be where one of ordinary skill in the art would be aware that similar problems exist.” *Id.*

Applicants respectfully assert that Tsuno fails to satisfy the conditions of the two-step test and is therefore a non-analogous art. First, Tsuno is not within the field of the inventors’ endeavor. Secondly, Tsuno is not attempting to solve the problem solved by the proposed invention. Applicants’ respectfully submit that the present invention provides a compact and effective X-ray source that is able to rotate about the patient at faster speeds and have narrow X-ray spectra so as to enable fast CT scanning with high resolution and at a lower doses thereby improving diagnosis and examination efficiency. Completely unrelated to above problem, Tsuno attempts to provide a lightweight and rugged mirror or mirror substrate with low linear expansion and high thermal conductivity. Therefore, Applicants respectfully submit that Tsuno is non-analogous art which is unavailable to the Examiner for the cited combination of references.

c. *There is no motivation to combine the cited references.*

When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Applicant respectfully submits that neither Kieffer, Tsuno nor Tillman suggests the combination relied upon by the Examiner or a motivation for such a combination. Instead the Examiner justifies the present combination as addressing supposed problems which are not noted in any of the references or by misconstruing

phrases within references to provide a justification. Indeed, the passage relied upon by the Examiner in the Tsuno reference as teaching reducing loss of light due to distance traveled through air relates to communication with satellites, i.e., loss of light over vast distances and in view of atmospheric disturbances, not within the confines of a medical imaging device. Office Action, page 5 and Tsuno, paragraph 5, lines 7-11. It is ludicrous to suggest that one of ordinary skill in the art would be motivated based on this passage to make the modification suggested by the Examiner. Accordingly, the applicants believe that the combination is not obvious to one skilled in the art and the Examiner is impermissibly using hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In view of the forgoing deficiencies, the Examiner has failed to establish a *prima facie* case of obviousness of claims 1 and 11. These claims, and the claims depending therefrom are therefore believed to be clearly patentable over the cited combination. Thus, it is respectfully requested that the rejections of claims 1-22 under 35 U.S.C. §103(a) be withdrawn.

**Claims 23 and 28 and the Claims Depending Therefrom and Claim 38.**

Applicants respectfully assert that the present invention, as recited in independent claims 23 and 28 is patentable over Kieffer, Tsuno, Tillman and Zhao, alone or in combination.

In Addition to the arguments above with respect to claim 1 and 11, Applicants respectfully submit that the Zhao reference is not available to the Examiner as prior art. In particular, Applicants respectfully stress that the Zhao reference (U.S. Patent No. 6,937,689) should be removed from consideration in accordance with 35 U.S.C. § 103(c) and M.P.E.P. § 706.02(I), because the present application and the Zhao reference were, at the time the invention was made, owned by, or subject to an obligation of assignment to, General Electric Company. Accordingly, Applicants respectfully request the Examiner

remove the Zhao reference from consideration. After the Zhao reference is removed according to 35 U.S.C. § 103(c), the Examiner's rejections based on the Zhao reference are moot.

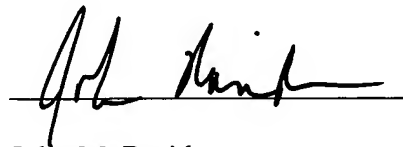
In view of the forgoing deficiencies, the Examiner has failed to establish a *prima facie* case of obviousness of claims 23 and 28. These claims, and the claims depending therefrom are therefore believed to be clearly patentable over the cited combination. Thus, it is respectfully requested that the rejections of claims 23-34 under 35 U.S.C. §103(a) be withdrawn.

**Conclusion**

In view of the remarks set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: March 8, 2006

A handwritten signature in black ink, appearing to read "John M. Rariden", written over a horizontal line.

John M. Rariden  
Reg. No. 54,388  
FLETCHER YODER  
P.O. Box 692289  
Houston, TX 77269-2289  
(281) 970-4545